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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/562,457	12/29/2005	Koichi Kuroki	SHM-16408	6038
40854	7590	01/29/2007	EXAMINER	
RANKIN, HILL, PORTER & CLARK LLP			LIN, KUANG Y	
4080 ERIE STREET			ART UNIT	PAPER NUMBER
WILLOUGHBY, OH 44094-7836			1725	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/29/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)
	10/562,457	KUROKI ET AL.
	Examiner	Art Unit
	Kuang Y. Lin	1725

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 29 December 2005.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 11-27 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 11-13,15-19,21-24,26 and 27 is/are rejected.
 7) Claim(s) 14,20,25 and 27 is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) Information Disclosure Statement(s) (PTO/SB/08)
 Paper No(s)/Mail Date 12/29/05 & 8/7/06.

4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____.
 5) Notice of Informal Patent Application
 6) Other: _____.

Art Unit: 1725

1. Claims 22, 24 and 27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 22, line 4, "pouring" shall be changed to "injecting" and in claim 24, line 2, "molding" to "article" to render the claim language in idiomatic expression. In claim 27, line 17, "dipping" is misspelled.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 11, 13, and 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 11-197,815 and further in view of JP 04-124,233.

JP '815 substantially shows the invention as claimed except that it does not show the use of viscosity probe for relating the viscosity of the semi-solid and the solid

fraction within the melt such that to regulate the semi-solid slurry producing process. However, JP '233 shows that feature to be conventional. In view of the prior art teaching as a whole, it would have been obvious to provide the viscosity probe of JP '233 in the apparatus of JP '815 to regulate the semi-solid slurry producing process. With respect to claim 13, it would have been obvious to provide any supporting means for the probe as long as it will perform the designated function.

5. Claims 12, 15, 16, 21 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 11-197,815 in view of JP 04-124,233 as applied to claim 11 above, and further in view of JP 10-211,565.

It would have been obvious to further provide the apparatus JP '815 with a vessel restoring device in view of JP '565 which shows that feature to be conventional. With respect to claims 15, 16 and 26, the admitted prior art as set forth in page 3, last paragraph of the specification shows those claimed features to be conventional.

6. Claims 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 11-197,815 in view of JP 04-124,233 and JP 10-211,565 as applied to claim 12 and further in view of applicant's admitted prior art as set forth in pages 10-11 of the specification or JP 63-256,257.

It would have been obvious to inject the semi-solid metal of JP '815 at a low speed at the later stage of molten metal injecting process such that to prevent

the penetration of semi-solid metal into the core in view of the admitted prior art or JP '257 which shows that claimed feature is known.

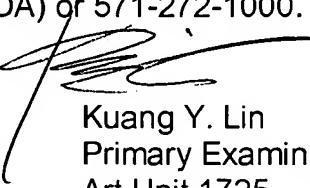
7. Claims 14, 20, 25 and 27 are objected to as depending from a rejected claim. However, they contain allowable subject matter and will be allowed upon the rejection under 35 USC 112, 2nd paragraph supra (claim 27 only) and being rewritten in an independent format.

8. US 5,144,998 to Hirai et al. and 4,108,643 to Flemings et al. are cited to further show the state of the art.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kuang Y. Lin whose telephone number is 571-272-1179. The examiner can normally be reached on Monday-Friday, 10:00-6:30.,

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Kuang Y. Lin
Primary Examiner
Art Unit 1725

1-22-07